On a New Genus of Foraminifera of the Family Astrorhizidæ.

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(Plate X.)

Among the dredgings made by the 'Porcupine' Expedition (third cruise), 1869, that obtained in the Faroe Channel at 440 fathoms was interesting from the number of specimens it contained of the large arenaceous Foraminifer *Botellina labyrinthica*, Brady.

While examining some of this material given me by the late Dr. P. H. Carpenter, I found that many of the specimens of *Botellina* had other Foraminifera adherent to them.

Most of these are *Truncatulina refulgens*, Montf. sp., and *T. lobatula*; but in two cases the adherent form proved something quite different—a type which has not yet, I believe, been described or named.

It consists of a tent-shaped structure, measuring about a twenty-fifth of an inch in height, with slightly less diameter at the base, composed entirely of sponge-spicules. The spicules are very regularly arranged and closely set together, all lying in the same direction, pointing from the circumference of the base toward the apex.

The spicular structure is in this case the more remarkable since there can be no question as to the abundance of other material at hand. The *Botellina* shells are constructed of coarse sand-grains, and by far the greater part of the dredging consists of similar material. In fact, the contrast between these delicate spicular cones and the coarse sandy structure of the organism on which they rest is one of the most striking instances I know of the selective power in Protozoa.

At the base the shell is fixed to the rough surface of the *Botellina* by a small amount of a white, doubtless calcareous, cement; but in the walls there is very little interstitial matter.

In the dry specimen the apex of the cone is closed; but I should think it probable that in the living condition the spicules were more or less mobile, so as to separate to some extent at the top, and allow a free passage of the protoplasm to the exterior.

Unfortunately there is not sufficient material to submit the structure of the shell to more complete examination.

The form therefore appears to be an extremely simple type of Foraminifer, living attached to foreign bodies and building a protective roof, but with that remarkable power of selecting sponge-spicules for its building material which is shown in *Pilulina*, *Marsipella*, and *Technitella*.

In habit it is the equivalent of simple forms of *Nubecularia* in the Porcellanea, and of *Placopsilina* and *Webbina* in the Lituolidæ.

It may be objected that this spicular structure should not be regarded as a character of generic value; and that such a type as *Placopsilina bulla* might, if circumstances compelled it to build with sponge-spicules only, produce a similar shell. There is, however, a great difference in the style of architecture of forms that constantly select spicules and those that, as it were, pick them up indiscriminately with sand and shell-fragments.

In such a form as *Haliphysema* the shell may be entirely sandy or completely spicular; but as all intermediate stages occur, no one would give separate names to the extreme forms. On the other hand, the characteristic shape of *Pilulina* and *Technitella*, combined with their constant spicular character, gives them an undisputed title to generic distinctness.

The case now under consideration seems to me to be a parallel one: and in proposing a new generic name I am only following the precedent of the late Dr. H. B. Brady.

The tent-like shape and the spicular structure suggest the name of *Rhaphidoscene*.

A possible alternative would be the revival of the name *Squamulina*, first used by Schultze *. His specimens, however, seem to have been only immature individuals of *Nubecularia*; and as the best-known form referred to this genus, the so-called *Squamulina scopula* of Carter, turned out to be founded on the basal dome of specimens of *Haliphysema*, it is better that the name should be allowed to drop.

EXPLANATION OF PLATE X.

Rhaphidoscene conica on *Botellina labyrinthica*.

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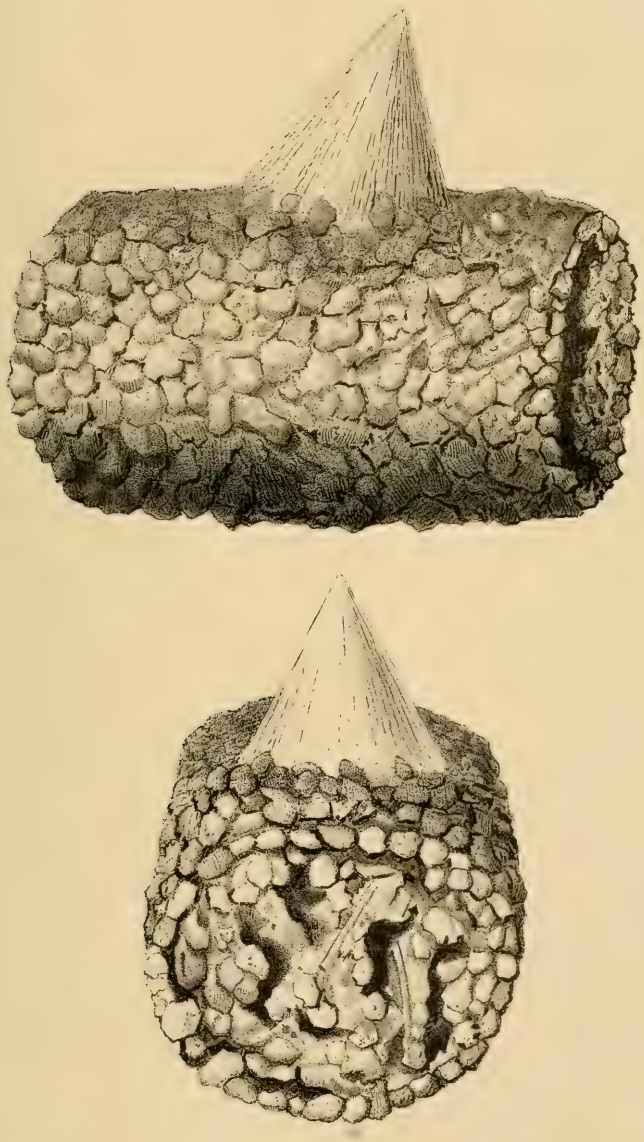
* Schultze, 'Ueber den Organismus der Polythalamien,' 1854.



A.V.J. del.

West, Newman lith.

RHAPHIDOSCENE CONICA on BOTELLINA LABYRINTHICA.